

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A system for characterizing tissue and to correct for optical fluctuations, comprising:

laser means for generating

an emission signal and

a reference signal,

a probe with a needle that is inserted into the tissue and that directs said emission signal to the probe and through the needle to the tissue for characterizing the tissue,

an emission optical detector,

a reference optical detector,

a transmission system including an emission optical fiber connected to said laser means, to said probe, to said needle, and to said emission optical detector that transmits said emission signal to said probe, to said needle, and from said probe to the tissue for characterizing the tissue, and from the tissue to said needle, to said probe and to said emission optical detector, and

a reference optical fiber connected to said laser means, to said probe, and to said reference optical detector that transmits said reference signal to said probe and from said probe to said reference optical detector, and

a compensation system that utilizes said reference signal to correct said emission signal for characterizing the tissue for the optical fluctuations.

2. (Previously Presented) The system for characterizing tissue of claim 1, wherein said laser means generates an emission signal that is an optical emission signal.

3. (Previously Presented) The system for characterizing tissue of claim 2, wherein said laser means generates a reference signal that is an optical reference

signal and said optical reference signal is less than 10% of said optical emission signal.

4. (Cancelled)

5. (Cancelled)

6. (Cancelled)

7. (Cancelled)

8. (Previously Presented) The system for characterizing tissue of claim 1, wherein said laser means includes an optical splitter that splits said emission signal and said reference signal.

9. (Previously Presented) The system for characterizing tissue of claim 1, wherein said compensation system utilizes said reference signal to correct said emission signal for optical fluctuations by reducing the effects of emission signal source fluctuations.

10. (Previously Presented) The system for characterizing tissue of claim 1, wherein said compensation system utilizes said reference signal to correct said emission signal for optical fluctuations by compensating for changes in transmission system efficiency.

11. (Previously Presented) The system for characterizing tissue of claim 1, wherein said compensation system utilizes said reference signal to correct said emission signal for optical fluctuations by reducing the effects of emission signal source fluctuations and compensating for changes in transmission system efficiency.

12. (Currently Amended) A system utilizing an optical and multisensor probe for tissue identification and to correct for optical fluctuations, comprising:

a probe with a needle that is inserted into the tissue for tissue identification, said ~~probe~~ needle having a first end and a distal end,  
a controller, said controller comprising

a laser for producing light,

an emission optical scattering and absorption spectroscopy sensor connected to said controller and to said probe and to said needle and configured to deliver and receive light from said probe and said needle,

an emission optical fiber connected to said controller and connected to said probe and said needle that extends to said distal end of said probe for tissue identification and connected to said emission optical scattering and absorption spectroscopy sensor,

a reference optical scattering and absorption spectroscopy sensor connected to said controller and to said probe and configured to deliver and receive light from said probe, and

a reference optical fiber connected to said controller and connected to said probe that extends to ~~said first end of~~ said probe but does not extend to said distal end of said ~~probe~~ needle and that is connected to said reference optical scattering and absorption spectroscopy sensor that improves said systems accuracy by reducing the effects of optical source fluctuations and changes in the fiber optic efficiency.

13. (Cancelled)

14. (Cancelled)

15. (Cancelled)

16. (Cancelled)